

Ultra Compact Cloud Physics Lidar for UAV Platforms, Phase II

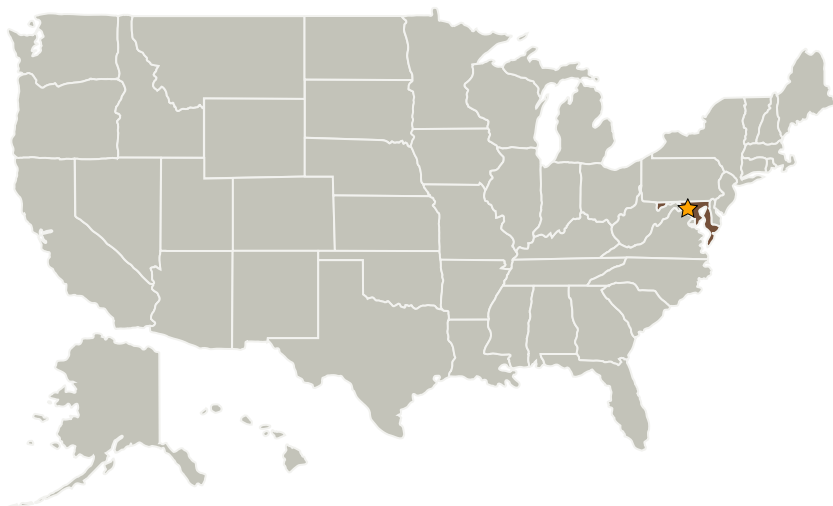
Completed Technology Project (2008 - 2010)



Project Introduction

We have designed a compact two-color, polarization-sensitive instrument to measure cloud characteristics from a high altitude UAV and can also be widely deployed as inexpensive ground-based ceilometers and aerosol finders. The instrument is modular, can operate with one or two wavelengths, and can measure depolarization or not depending on the need. The instrument is in two pressurized boxes, an optics box and an electronics box, each about half a cubic foot in size. If desired, the two boxes can be attached for a single box solution. Fiber optical technology is used to minimize critical optical alignments and permit field replacement of the laser and detectors. Micro-optic fiber components are used to separate the colors before detection. We propose to build, test, and calibrate the instrument in the Phase 2 effort.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Goddard Space Flight Center (GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
Sigma Space Corporation	Supporting Organization	Industry Small Disadvantaged Business (SDB)	Lanham, Maryland



Ultra Compact Cloud Physics Lidar for UAV Platforms, Phase II

Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Organizational Responsibility	1
Project Transitions	2
Project Management	2
Technology Areas	2

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Ultra Compact Cloud Physics Lidar for UAV Platforms, Phase II

Completed Technology Project (2008 - 2010)



Primary U.S. Work Locations

Maryland

Project Transitions



May 2008: Project Start



August 2010: Closed out

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.1 Remote Sensing Instruments/Sensors
 - └ TX08.1.5 Lasers